

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 1. (Original) A 2^n-1 shuffling network comprising:

2 a shuffle exchange network for receiving 2^n-1 data inputs and a dummy input and
3 providing 2^n outputs;

4 a replacement set of 2^n-1 data switches for receiving 2^n-1 outputs from said
5 shuffle exchange network; and

6 a selection circuit for actuating selective ones of said 2^n-1 data switches in said
7 replacement set to replace one of the 2^n-1 outputs of the shuffle exchange network with the $2^{n^{th}}$
8 output of the shuffle exchange network.

1 2. (Original) The 2^n-1 shuffling network of claim 1 in which said shuffle exchange network
2 includes at least one set of shuffle data switches.

1 3. (Original) The 2^n-1 shuffling network of claim 2 in which each set of shuffle data switches
2 includes at least 2^n data switches.

1 4. (Original) The 2^n-1 shuffling network of claim 2 in which there are n sets of shuffle data
2 switches.

1 5. (Original) The 2^n-1 shuffling network of claim 2 in which there are 2^n data switches in each
2 said set of shuffle data switches.

1 6. (Original) The 2^n-1 shuffling network of claim 1 in which each said data switch in said
2 replacement set of data switches includes a two to one multiplexer.

1 7. (Currently Amended) The 2^n-1 shuffling network of claim [[1]] 2 in which each said data
2 switch in said set of shuffle data switches includes a two to one multiplexer.

1 8. (Original) The 2^n-1 shuffling network of claim 3 in which said shuffle exchange network
2 includes a coding circuit for selectively actuating said sets of data switches in said set of shuffle
3 data switches.

1 9. (Original) The 2^n-1 shuffling network of claim 8 in which said coding circuit actuates each set
2 of shuffle data switches independently.

1 10. (Original) The 2^n-1 shuffling network of claim 8 in which said coding circuit actuates all of
2 the data switches in a set of shuffle data switches together.

1 11. (Original) The 2^n-1 shuffling network of claim 8 in which said coding circuit includes a
2 sequence generator for providing each data input at the data output only once each sequence
3 cycle.

1 12. (Original) The 2^n-1 shuffling network of claim 11 in which said sequence generator includes
2 a pseudo random number generator.

1 13. (New) A 2^n-1 shuffling network comprising:

2 a shuffle exchange network for receiving 2^n-1 data inputs and a dummy input and
3 providing 2^n outputs;

4 a replacement set of 2^n-1 data switches for receiving 2^n-1 outputs from said
5 shuffle exchange network, each said data switch in said replacement set of data switches
6 including a two to one multiplexer; and

7 a selection circuit for actuating selective ones of said 2^n-1 data switches in said
8 replacement set to replace one of the 2^n-1 outputs of the shuffle exchange network with the 2^{nth}
9 output of the shuffle exchange network.

1 14..(New) A 2^n-1 shuffling network comprising:

2 a shuffle exchange network for receiving 2^n-1 data inputs and a dummy input and
3 providing 2^n outputs, said shuffle exchange network including at least one set of shuffle data
4 switches, each said data switch in said set of shuffle data switches including a two to one
5 multiplexer;

6 a replacement set of 2^n-1 data switches for receiving 2^n-1 outputs from said
7 shuffle exchange network; and

8 a selection circuit for actuating selective ones of said 2^n-1 data switches in said
9 replacement set to replace one of the 2^n-1 outputs of the shuffle exchange network with the 2^{nth}
10 output of the shuffle exchange network.